

REMARKS

Upon entry of this amendment, new claims 73 & 74 will be added. Claims 1, 2, 6-8, 11, 12, 15-17, 20-24, 27, 30, 32, 35-38, 40, 67-74 will be pending.

Applicants appreciate Examiner's notice of the inadvertent mis-identification of a reference in Applicant's February 13, 2004 IDS. The patent number for document 16 on IDS should be listed as 6,682,792 B2 to Schmal et. al., dated 1/27/04.

Applicants have invented high temperature food preparation films composed of thermoplastic elastomer block copolymers and non-elastic polyesters. The high temperature food preparation films include blended monolayer thermoplastic elastomer films and multi-layered thermoplastic elastomer films. Thermoplastic elastomer block copolymers include, for example, polyether-ester block copolymers. Non-elastic polyesters include, for example, polybutylene terephthalate.

These new high temperature food preparation films are ideal for preparing foods at high temperatures, including steam cooking applications, at from about 212 degrees Fahrenheit to about 400 degrees Fahrenheit. The films are ideal for preparing foods, such as for example meat products.

Applicants' films maintain surprisingly good barrier properties at low gauge thickness. For example, Applicants' films provide a water vapor barrier having a transmission coefficient of less than about 20 gms/100 in²/day and an oxygen barrier coefficient of less than about 100 cc-mil/100 in²/day.

Claim Rejection – 35 U.S.C. § 112

Applicants have replaced the inadvertent recitation of "blended monolayer" in claim 11. Applicants request withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

Double Patenting

Claims 1-4, 6-8, 11-18, 20-24, 27-30, 32-38, 40, and 67-72 are rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-43 of U.S. Patent No. 6,682,792 to Schmal et al. Although Applicants do not necessarily concur with the Examiner, this rejection can be resolved,

depending upon the nature of any claims ultimately deemed allowable, through the filing of a terminal disclaimer.

Claim Rejection – 35 U.S.C. § 102(b)

Claims 1, 2, and 6-8 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Pat. No. 3,907,926 to Brown et al. (“the Brown patent”). This rejection is respectfully traversed as the Brown patent does not teach every element of the claimed invention.

In contrast to the high temperature food preparation films recited in claims 1, 2, and 6-8, the Brown patent is nonanalogous art that teaches blended polymer compositions for use in manufacturing pneumatic tubing, not polymer films. The compositions described in the Brown patent are composed of 4.7 to 66.7 weight percent polybutylene terephthalate and 95.3 to 33.3 weight percent copolyetheresters. The Brown patent describes *compression molding* these compositions into “test bar” samples, not films, that are tested for physical properties.

The Brown patent does not teach *high temperature food preparation films* having beneficial barrier properties, e.g., a water vapor transmission coefficient of less than about 20 gms/100 in²/day. Indeed, it is unclear whether the compositions taught by the Brown patent are even safe to use with food at high temperatures. High temperature food preparation films must maintain structural integrity at temperatures between about 212 degrees Fahrenheit to about 400 degrees Fahrenheit. The Brown patent does not teach films having properties that permit the preparation of food at high temperature and therefore does not teach the food preparation films recited in claims 1, 2, and 6-8.

Moreover, the Brown patent does not teach films having the same morphology as the films recited in claims 1, 2, and 6-8, as the Brown patent does not teach films composed of *elastomeric* block copolymers and does not teach films made by blown film extrusion techniques. The morphology of a film’s starting materials and the manufacturing conditions used to make the film greatly affect the film’s physical properties and barrier properties, e.g., oxygen and water vapor barrier properties.

The Brown patent is limited to films composed of copolyetheresters, not *elastomeric* block copolymers. Although the Brown patent teaches polyether esters having long ester chain units and short chain ester units, there is simply no teaching of how the units are

organized, i.e., they are random copolymers. Also, the teaching of the Brown patent is limited to the manufacture of objects by compression molding techniques, not films made by blown film extrusion techniques. It is well known to those skilled in the art that the properties of products made using compression molding techniques are different from the properties of products made using blown film extrusion techniques.

It follows that the morphology, and hence, barrier properties of the films taught by the Brown patent are not the same as the barrier properties of the films recited in claims 1, 2, and 6-8. Therefore, the Brown patent does not always and inevitably direct one skilled in the art to high temperature food preparation films having the advantageous barrier and structural properties as recited in claims 1, 2, and 6-8. Without such a teaching, the present claims cannot be found to be anticipated by the Brown patent.

Accordingly, since the Brown patent does not teach all of the elements of Applicants' claims 1, 2, and 6-8 withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

In the Office Action claims 1, 3, and 6-8 have been rejected under 35 U.S.C. §102(b) as allegedly being unpatentable over U.S. patent No. 6,146,764 to Suokas et al. ("the Suokas patent"). This rejection is respectfully traversed as the Suokas patent does not teach every element of the claimed invention. Claim 3 has been canceled without prejudice.

In contrast to the high temperature food preparation films recited in claims 1 and 6-8, the Suokas patent is non-analogous art that teaches blended monolayer films composed of 5 to 40 weight percent anisotropic liquid crystal polymer and 60 to 94 weight percent of isotropic polymer. Isotropic polymers include copolymers of ethylene and propylene. Anisotropic liquid crystal polymers include copolymers of polyalkylene terephthalate. The Suokas patent teaches films composed of polypropylene and a copolyester of p-hydroxybenzoic acid (HBA) and polyethyleneterephthalate (PET) having an oxygen barrier permeability of 115 cm³/(m²*d*bar).

The Soukas patent's teaching of an oxygen gas transmission *rate* cannot be compared to the presently recited oxygen barrier *coefficient*. The comparison of transmission rate to permeability coefficient is improper, because Applicants' permeability coefficient standardizes film gauge thickness to 1.0 mil, i.e., 25 microns.

When comparing films of the same thickness, the films recited in claims 1 and 6-8 provide a significantly higher oxygen barrier compared to the films taught by the Soukas patent. For example, Example 1 of the Soukas patent describes an oxygen gas transmission rate of $115 \text{ cm}^3/(\text{m}^2 \cdot \text{d} \cdot \text{bar})$ for a film 50 microns thick, i.e., 2 mils; twice the film thickness compared to the standardized permeability coefficient of Applicants' claims.

The Office Action's argument based on the teaching of the oxygen transmission *rate* of Example 1 is also improper because Example 1 measures the barrier properties of a film composed of polypropylene and a copolyester, not Applicants' film's composition. Applicants recite films composed of elastomeric block copolymers and non-elastic polyesters, not polypropylene. The Soukas patent's teaching of films composed of polypropylene having a specific oxygen barrier permeability does not teach one skilled in the art how to achieve lower barrier properties using other polymers blends composed of elastomeric block copolymers as recited in claims 1 and 6-8.

The Soukas patent warns that it is very difficult to predict the barrier properties of films made from different starting materials because: "the morphology of the starting compound is one of the most important factors" with regard to oxygen barrier properties. See Col. 12, lines 47-50. Similarly, Example 1 of the Soukas patent shows the sensitivity of film oxygen barrier properties to fabrication conditions: "two batches of the above blends composition were compounded in different ways in order to produce dissimilar morphologies." See Col. 12, lines 9-11 and associated Table.

The Soukas patent does not teach films composed of the same starting materials, i.e., elastomeric block copolymers, as recited in claims 1 and 6-8. Although the Soukas patent describes isotropic polymers such as polyethylene, polypropylene, and copolymers of the same, there is simply no teaching of films composed of *elastomeric block copolymers*. See Col. 6, lines 39-55.

It follows that the morphology, and hence, barrier properties of the films taught by the Soukas patent are not the same as the barrier properties of the films recited in claims 1 and 6-8. Therefore, the Soukas patent does not always and inevitably direct one skilled in the art to high temperature food preparation films having the advantageous barrier and structural properties as recited in claims 1 and 6-8. Without such a teaching, the present claims cannot be found to be anticipated by the Soukas patent.

Accordingly, since the Soukas patent does not teach all of the elements of Applicants' claims 1 and 6-8 withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

Claim Rejections – 35 U.S.C. §103(a)

Claims 4 and 69 are rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over the Brown patent. This rejection is respectfully traversed as the Brown patent does not teach or suggest every element of the claimed invention. Claim 4 has been canceled without prejudice.

Claim 69 depends from a base claim that has been amended and is not taught or suggested by the Brown patent. As described above, the Brown patent does not teach or suggest high temperature food preparation films having the barrier properties recited in claim 69. Further, the Brown patent does not teach elastomeric block copolymers of polyether ester. There is simply no suggestion that one of ordinary skill in the art would be motivated to modify the Brown patent so as to achieve the subject matter of claim 69.

Claims 11-18, 20-23, and 70 are rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over U.S. Patent 4,264,667 to Murakami ("the Murakami patent"). This rejection is respectfully traversed as the Murakami patent does not teach or suggest every element of the claimed invention. Claims 13, 14, & 18 have been canceled without prejudice.

The Murakami patent does not teach multilayerd films composed of *separate layers* of (a) a non-elastic polyester, i.e. poly butylenes terephthalate, and (b) an elastic block copolymer, i.e., polyether ester, as recited in claims 11, 12, 15-17, and 70. The Murakami patent teaches films necessarily composed of a *blended* monolayer that is laminated with an additional layer of film. For example, the Murakami patent teaches blended films comprised of terephthalic polyester and block copolyester. This blended layer is then laminated with a second layer of polymer, e.g., polybutylene terephthalate. See Col. 8, lines 60-64.

As the Murakami patent does not teach films having a first layer of polybutylene terephthalate and a second *separate layer* of elastomeric block copolyether ester, the Murakami patent does not teach multi-layered films as recited in claims 11, 12, 14-17, 19-23.

One skilled in the art would not be motivated to achieve films recited in claims 11, 12, 15-17, and 70 based on the teaching of the Murakami patent as the morphology of the films taught by the Murakami patent are different from those recited by Applicants. Noting the difficulties of achieving beneficial film properties, the Murakami patent states:

It is very difficult to eliminate even one of these defects, inferior pinhole resistance, flexing resistance, printability, and antistatic properties, and it is more difficult to obtain polyester film improved in all of these properties.

See Col 1, lines 58-63. As the Murakami patent admits, it is very difficult to predict all properties of a material based on one particular property. Therefore, it would not be obvious to one skilled in the art to achieve films having the water vapor transmission coefficient and oxygen barrier coefficient and physical properties recited by Applicants.

Accordingly, one skilled in the art would not be motivated to modify the Murakami patent to achieve high temperature food preparation multilayered films composed of a first layer of elastic block copolymer and a second layer of non-elastic polyester as recited in claims 11, 12, 15-17, and 70.

Claims 5, 24, 27-29, 38, 40, and 71 are rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over the Brown patent in view of U.S. Patent 6,135,281 to Simhaee (“the Simhaee patent”). Also, claims 30-37, 67, 68, and 72 are rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over the Murakami patent in view of the Simhaee patent. Applicants traverse this rejection because combination of Brown, Murakami, and Simhaee patents would not have produced any claimed invention, even if it were assumed for the sake of argument that such a combination is one that those of ordinary skill would have been motivated to make. Claims 5, 28, 29, 31, 33, and 34 have been canceled without prejudice.

The cited references, for example, do not teach or suggest *high temperature food preparation films* composed of elastic block copolymer and non-elastic polyester having beneficial barrier properties, e.g. water vapor transmission coefficient of less than about 20 gms/100 in²/day.

As described above, the Brown and Murakami patents do not teach or suggest high temperature food preparation films having the barrier properties recited in claims 24, 27, 30,

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32, 35-38, 40, 67, 68, 71, and 72. Further, the Brown patent does not teach elastomeric block copolymers of polyether ester. The Simhaee patent does not remedy these deficiencies.

The Simhaee patent teaches a roll of plastic bags, having multiple layers, but does not teach or suggest films or bags composed of elastic block copolymer and non-elastic polyester having the barrier properties recited in claims 24, 27, 30, 32, 35-38, 40, 67, 68, 71, and 72.

Accordingly, since the Brown, Murakami, and Simhaee patents do not teach or suggest all of the elements of Applicants' claims 24, 27, 30, 32, 35-38, 40, 67, 68, 71, and 72 withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

CONCLUSION

Applicant believes that the foregoing is a full and complete response to the Office Action of record. Accordingly, an early and favorable reconsideration of the rejections and allowance of all of pending claims, claims 1, 2, 6-8, 11, 12, 15-17, 20-24, 27, 30, 32, 35-38, 40, and 67-74, are respectfully requested.

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